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Location of body fat can elevate heart disease, cancer risk

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Individuals with excessive abdominal fat have a greater risk of heart disease and cancer than individuals with a similar body mass index (BMI) who carry their fat in other areas of the body, according to a study published online today in the *Journal of the American College of Cardiology*.

Death and disease risk associated with excess body weight can vary among individuals with similar BMI. Ectopic fat, or fat located where it is not supposed to be, in this case being visible in the abdominal area, could be the cause of this difference in risk. It's widely known that abdominal fat can be more dangerous than fat in other areas, but this study is the first to use CT scan to study specifically located fat depots for direct associations with disease risk.

"Given the worldwide obesity epidemic, identification of high-risk individuals is important, as it allows targeting of preventive and therapeutic measures," said Kathryn A. Britton, MD, MPH, lead author of the study and an instructor of medicine at Brigham and Women's Hospital in Boston.

With this study, researchers sought to find a link between the location of body fat and specific risk factors for heart disease and cancer, which could explain why individuals with different body types and similar BMIs have varied obesity related health conditions.

Researchers assessed ectopic fat in the abdominal area, around the heart

tissue and around the aortic artery of 3,086 participants from the Framingham Heart Study and followed the participants for heart disease and cancer for up to seven years. The average age of participants was 50 years and nearly half were women.

Each patient was assessed, using a CT scan to identify areas of fat accumulation. Over the follow-up period, patients were assessed for heart disease, cancer and death risk while adjusting for standard risk factors.

Overall, there were 90 cardiovascular events, 141 cancer cases and 71 deaths. Abdominal fat, which is typically an indicator of fat around internal organs, was associated with incident heart disease and cancer after adjusting for clinical risk factors and general obesity.

"Contrary to previously published studies comparing BMI and waist circumference, the presence of abdominal fat improved the ability to predict for cardiovascular disease, supporting the hypothesis that abdominal fat may partially underlie the association of body fat and heart disease and cancer," said Caroline S. Fox, MD, MPH, senior author on the study and a senior investigator at the National Heart, Lung and Blood Institute Laboratory for Metabolic and Population Health in Framingham, Mass.

Provided by American College of Cardiology

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